Before the

Federal Communications Commission
Washington, DC 20554

In the Matter of

Request to Re-Open the Petition for	)	RM 8658
Rule Making Regarding Hearing	)	Petition for Rule Making
Aid-Compatible Telephones	)	Section 68.4 (a)

Comments of the Alexander Graham Bell Association for the Deaf and Hard of Hearing (AG Bell)

The Alexander Graham Bell Association for the Deaf and Hard of Hearing (AG Bell) submits these comments dated December 8, 2000 in response to a Request to Re-Open the Petition for Rule Making Regarding Hearing Aid-Compatible Telephones. Along with its fellow members of the Wireless Access Coalition, AG Bell requests that the Commission reopen rulemaking to revise the regulations regarding access to wireless telephones by people who use hearing aids and cochlear implants, 47 C.F.R. §68. AG Bell is concerned that because the current regulations exempt wireless phones from coverage by the HAC Act (47 U.S.C, §610), people who depend on hearing aids and cochlear implants to hear are being deprived of effective access to wireless communications.

AG Bell was one of the original members of the HEAR-IT- NOW coalition that petitioned for the original rulemaking on June 6, 1995 (RM-8658). Following the petition and comment period, AG Bell and the other coalition members agreed in a letter to Reed Hundt, the Chairman of the FCC, to work with the wireless industry to reach a mutually acceptable solution to the problem of interference with hearing aids by digital wireless phones. However, the total lack of progress towards resolving this problem has

made it clear that a voluntary approach has failed. We have, therefore, concluded that if users of hearing aids and cochlear implants are to have any hope of being able to use digital wireless phones, then the FCC must promulgate regulations requiring the industry to provide that access. Through regulations to enforce the Hearing Aid Compatibility Act (HAC) (47 U.S.C. §610) the FCC has assured the millions of deaf or hard of hearing Americans that they will be able to use telephones. Now is the time to extend that assurance to the effective use of digital wireless phones.

AG Bell is a national organization comprised of parents of children who are deaf and hard of hearing, professionals who serve hearing impaired children, and adults with hearing loss. Over half of AG Bell's members are parents. The organization provides information and support and conducts advocacy on childhood hearing loss, emphasizing listening and speaking as a vehicle for acquiring spoken language. AG Bell children and adults utilize technology fully in order to maximize use of their residual hearing to the extent that they can. With hearing technology, telecoils and telephone amplifiers, many AG Bell constituents are able to use voice telephones. We are concerned about ensuring access to wireless telephones today and improving upon access in the future as more and more people in our society rely upon wireless telephones in their personal lives and in the workplace.

Interference Problem Identified in 1995

Over five years ago, the problem of interference between digital wireless telephones and hearing aid technology was formally brought to the attention of the Federal Communications Commission. At that time, the HEAR-IT-NOW coalition, which included AG Bell and two other organizations, filed a petition for rule making requesting

that the Commission amend Section 68.4 (a) of the Commission's Rules, (47 C.F.R S 68.4 (a)) to specify that broadband PCS devices must be hearing aid compatible. Consumer organizations then noted that the emerging digital wireless technology presented especially troubling usability concerns, both because of the lack of telecoils in most such phones as well as the "buzzing" caused by such phones when a hearing aid wearer attempts to use them. Indeed, some hearing aid users even noted problems of "bystander" interference, which occurred when someone wearing hearing aids was standing in close proximity to an individual using a digital wireless telephone.

Although the wireless telephone industry initially trivialized interference problems and told hearing aid users to "take their hearing aids out when using such phones" or "use the phone in the other ear," eventually consumers were able to convince the industry that the problems were real and, and in fact, precluded users of hearing technology from using the new PCS devices. Then FCC Chairman Reed Hundt directed industry to work with consumers to address the problem but declined to halt the deployment of such wireless telephones. A major education effort was convened in Washington, DC on January 3, 1996, "Hearing Aid Compatibility and Accessibility to Digital Wireless Telecommunications Summit."

A series of task forces and activities ensued involving telephone manufacturers, wireless providers, hearing aid manufacturers, consumers, and universities. Despite an initial flurry of effort and promises made to find acceptable long-term solutions that would allow hearing aid users access to PCS technology, little progress has been made on the phone side. Two manufacturers (Nokia and Motorola) developed neckloops (termed in 1996 as a “short-term solution”) that make it possible for individuals who have telecoils in their hearing aids to use PCS phones in this manner. However, only an estimated 20

percent of hearing aids are equipped with telecoils; hence, the vast majority of people using hearing technology (hearing aids or cochlear implants) still have no options for accessing digital wireless telephones. Further, many of our members who do have telecoils and the ability to utilize the neckloop option have noted that it is cumbersome and inconvenient. The individuals involved in the summit process all agreed, at the time, for a variety of reasons, that such neckloops were a short-term, and definitely not a long-term solution to the problem.

Hearing Aid Manufacturers Took Rapid Action

Hearing aid manufacturers responded relatively quickly to the problem that was initially identified in 1995, as customers voiced concerns about being left out of the telecommunications revolution because of their hearing technology. Immunity improvements have been incorporated into most new models of hearing aids although because most insurance policies do not cover hearing aids and the cost of new models can easily reach $3,500 apiece (and most people need two), many users still are forced to make do with older hearing technology that does not incorporate immunity to such electromagnetic interference.

Oticon, a large hearing aid manufacturer, noted that it has been working towards eliminating digital telephone interference problems. Newer model hearing instruments are partially "immunized" for this type of interference in the design phase as retrofitting is prohibitively expensive and is not generally feasible. Oticon and other hearing aid manufacturers have begun to indicate a ratings scheme in their technical data for hearing aids which includes a new measurement called EMC or Electro Magnetic Compatibility Immunity, dB SPL. The dB SPL figure refers to Input Related Interference Level (IRIL).

For example, Category I refers to a 20 dB SPL (or less) meaning the phone can be used on the fitted ear with some interference. Category II refers to a 20-36 dB SPL in which the phone can be used on the ear opposite the fitted ear with some interference. (This would require that the user have hearing loss on only one ear, which is less common than bilateral loss.) Category III refers to a 37-55 dB SPL in which the phone can be used on the opposite ear but with annoying interference. Category IV refers to 55 dB SPL and up in which hearing instruments cannot be used with most digital cellular telephones. In this case, a hearing aid user would likely experience "bystander" interference when others are using a digital telephone in close proximity.

However, even Oticon's most immune models such as the PrimoFocus CIC, Ergo and others in their digital line, are not completely immune to such interference. (Note: CIC refers to "completely in the canal," a very small model of hearing aid, which is not appropriate for all hearing aid users.) CIC models are too small to incorporate a telecoil feature, which is necessary for many people with more severe hearing loss.

Additionally, Oticon engineers noted that the interference problem, in many ways, appears to be getting worse, rather than better. As wireless phones get smaller, designers tend to use ceramic speakers rather than magnetic ones. This change means that there is no inductive field at all and hence no ability to incorporate a working telecoil.

Although the January 1996 Hearing Aid Compatibility Summit was intended to stimulate improvements in both hearing aids and telephones, there has clearly been considerably more movement on the hearing aid front. Consumers are frustrated by an apparent lack of attention to this issue and the fact that promises made as part of the Summit have never been fulfilled.

Phenomenal Growth of Digital Wireless Telephones

Total cellular revenues worldwide will increase from $300 billion at the end of 1999 to $462 billion by the end of 2001, and $601 billion by the end of 2003.[1] In the five years since this issue was first brought to the Commission's attention, PCS technology has grown astronomically in the United States to the point that it now accounts for an estimated 77% of the global cellular phone market.[2] Some sources estimate that this will increase to 95% by the year 2005.[3] One important result of this increase is seen in the fact that over 43 million calls to emergency numbers are made from wireless phones each year.[4]

Digital wireless telephones offer wide-ranging features at an affordable price. Long distance calls on such phones are generally priced at the same level as local calls with many providers offering inexpensive monthly packages. For example, the Sprint network is currently offering a package that includes 1500 minutes (500 prime time, 1,000 weekend) anywhere in the U.S. for $34.99 per month. The reception quality of digital telephones is far superior to that of analog-most people find it comparable to wire-line. Coverage is often comparable or superior to analog.

In contrast, a typical analog telephone plan from Verizon Wireless that was mentioned by one member included a monthly access charge of $6.95 with other charges based on specific usage (i.e., number of minutes, long distance versus local). Long distance calls were substantially more than local calls. For a recent month, this individual used her

[1] Ovum, Dec. 1999
[2]Cellular Stats Worldwide. Cellular.co.za/statistics_latest.

[3]OpenTV Inside Mobile Data – Market Statistics, opentv.com/industry/mdexpert.stats
[4] World of Wireless Communications Consumer resources at wow-com.com/consumer/faqs.

phone entirely for local calls and paid a monthly total of $22, which covered 37 local minutes of phone time. Compare that to the digital charge of 1500 minutes for $34.95 per month and it's easy to see that analog customers are paying more for inferior service. However, this individual (who uses a cochlear implant) has no other option but analog.

The hard of hearing family member pays considerably more for her service. Further, she does not use her analog wireless telephone for calls made while traveling because of the considerable expense of doing so while her family members are able to make long distance for the same price as local calls. Clearly, there is a significant inequity in her access to the new PCS technology. She pays more for a considerably inferior service. In fact, we note that one wireless phone provider, Sprint PCS, has an entire advertising campaign whose main thrust is to disparage analogue service as inferior, and, in an attempt at humor, less moral and upright than digital service. Further, many cellular telephone experts project that analog service will be entirely discontinued in the future, which has already happened in Australia where digital wireless is the only remaining option.

AG Bell is concerned about the existing inequality of service for users of hearing technology but we are particularly troubled about implications for the future as the PCS technology becomes even more a part of typical communication. We want our hearing impaired children of today to be able to fully participate in the advantages that such telephones offer. Regardless of level of hearing loss, children are now being identified within hours of birth and an increasing proportion of children with hearing loss-regardless of level of hearing loss-will be using voice telephones (as opposed to TTYs) in the future. Indeed, with dramatic improvements in hearing aids and cochlear implant technology this has already begun to happen to a dramatic degree. In one recent study,

all pediatric cochlear implant users had measurable open set discrimination by the end of the study period. [5] This means that a new generation of children with significant hearing impairments is growing up with the capacity to use telephones. Unfortunately, without major changes, these people will be shut out from wireless phones.

We fully expect that this percentage will continue to increase in the years ahead. How ironic it would be for these children whose families have so consciously worked to provide them with maximum opportunity to use their residual hearing be denied the ability to access the latest element in the telecommunications revolution because digital wireless manufacturers have not made their products accessible to users of hearing technology!

Digital Wireless Manufacturers Inadequate Response to the Problem

We note that since 1996 that there have been no significant changes in digital phone technology designed to improve access for people who use hearing aids and cochlear implants. Yet, in the same period, it has become readily achievable to provide services that allow users to receive email over a wireless phone, to "surf" the Internet, check stock prices, inventories, and plane reservations.[6] Hands free operations for wireless phones are now common, voice activated dialing is possible[7]. It is even now possible to have a wireless phone that coordinates with one's wardrobe. We are concerned that, despite such market friendly improvements the industry is faced with no regulations requiring

[5]Waltzman, SB, et al (1997) Open-Set Speech Perception in Congenitally Deaf Children Using Cochlear Implants. The American Journal of Otology, 18 (3), 342-349.

[6]"Want to make your business more productive?" Sprint PCS Advertisement, New York Times, 12/7/00 p. A32. See also "Productivity²", sprint PCS Advertisement, Washington Post 12/7/00, p. A58.

[7]Nortel (Northern Telecom) Debuts Enhanced Wireless Voice-Activated Dialing , Press release February 23, 1998.

them to make improvements in hearing aid accessibility and has chosen to avoid making even the most simple improvements.

Our survey of members brought out a second, and in many ways more troubling issue. It appears that the industry is making no effort to educate the public about usability issues, or use existing technology to accommodate hearing aid and cochlear implant users. We found an almost universal ignorance among consumers of their rights with regard to accessibility of wireless telephone service. Further, we found a large-scale failure of the industry to address that lack of knowledge within its customer base, or to make the retail sales force more knowledgeable about this issue.

For example, approximately 20% of hearing aid users have a telecoil that would make the availability of the inductive neck loop a relatively effective, if inconvenient, means of acquiring digital wireless access. Yet despite this inexpensive accommodation, most wireless service providers either fail to have the devices available for sale, fail to offer phones that can use such devices, or have retail staffs that are ignorant of the availability of such devices.

We call the Commission's attention to the case of one of our members who attempted to obtain service from Sprint PCS. This individual had determined that the Nokia phone with the optional inductive loopset would allow adequate access to the service. However, even though he tried at six different retailers and Sprint PCS directly he was unable to obtain this phone from Sprint. The managers of two Sprint operated retail stores (located in Newington and West Hartford, Connecticut) told him that the company did not offer such a phone. He persevered and found the same result from a third party retailer of Sprint service (Circuit City, Newington, CT), as well as from the companies direct

Internet, and 800 number outlets.

More troubling was the fact that a supervisor at Sprint's direct 800 sales center stated to the customer that the company did not offer any phones that were compatible with a BTE hearing aid, or that allowed access to the user of an inductive loop. He was further told that Sprint did not believe that it had a legal obligation to provide hearing aid accessible phones. He was told that Sprint was looking into the possibility of offering such phones but that there was no expected time for such changes.

Even when this individual was able to obtain an appropriate phone from Verizon Wireless (retail store in Cromwell, CT) he noted that the store manager had never heard of the inductive loop device, and that there was no such equipment available at his store. The member, (a parent of a child with a hearing impairment) learned of the existence of this type of equipment without any input from a wireless service provider, or phone manufacturer, but rather through an Internet listserve for parents of hearing impaired children, and obtained the device, at a cost of approximately $60 from a separate retail store.

AG Bell found that this situation is the norm in the current market. We believe that this failure to adequately train retail personnel has a doubly detrimental effect. First, it deprives the consumer of access to peripheral equipment that might be able to accommodate his hearing aids. Second, it adds to the confusion and serves to reduce the chance that the consumer will take steps to deal with this situation, such as filing a complaint with the FCC.

Need to Take a System-Wide Look

AG Bell is also concerned that the wireless industry is apparently looking at the issue only in the telephone equipment. At the time this issue was first identified in 1995, we asked the FCC to hold up deployment in part because we felt that it would be easier to address the interference problem as part of the telephone system development, rather than simply looking at ways to make changes in the handset.

One member noted that during a trip to New York City in early December 2000, he had occasion to try his wife's Motorola Startac telephone, which he had never been able to successfully use before. The fact that there are numerous transmitting cells in New York means that the cell phone could operate at lower power levels and enable the user of hearing technology to make calls that he had not been able to make before.

We urge the FCC to take action that would require manufacturers and service providers to work together to find solutions in a comprehensive and thoughtful manner that considers both the handset and the system characteristics.

Conclusion

It is clear that wireless communications have become an integral part of modern life, and that the use of wireless devices for day to day communication will continue to grow. AG Bell is concerned that an unfortunate element of this trend is the fact that millions of deaf or hard of hearing Americans are being left behind. Despite our hope that cooperation with the wireless industry would effectively resolve this problem, the exemption form the Hearing Aid Compatibility Act for wireless phones has meant that people who depend on

hearing aids and cochlear implants are being increasingly deprived of access to this vital service. We strongly urge the Commission to take the first step to reverse this trend, and to use this opportunity to guarantee that all Americans will have effective access to wireless telephones.

Respectfully submitted,

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